

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant :	Dana Alexa Totir et al.	Art Unit :	1745
Serial No. :	10/800,905	Examiner :	Raymond Alejandro
Filed :	March 15, 2004	Conf. No. :	1479
Title :	NON-AQUEOUS ELECTROCHEMICAL CELLS		

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

FOURTH DECLARATION OF DANA ALEXA TOTIR, KIRAKODU S.
NANJUNDASWAMY AND MICHAEL POZIN UNDER 37 C.F.R. § 1.131

1. We are the inventors of the inventions claimed in the above-captioned patent application. The following work was conducted in the United States.
2. Two laboratory notebook pages from a laboratory notebook of Dana Alex Totir are attached. The notebook pages are signed by Ms. Totir and are dated prior to December 3, 2002. The two pages are true and complete copies from the original notebook, except that the dates on the laboratory notebook pages have been whited out and information is highlighted as described below.
3. The laboratory notebook pages demonstrate that electrochemical cells covered by claims 1-5, 8-12, 14-24, 28, 31-35, 39-43, and 45-46 were made and used prior to July 29, 2002.
 - (a) Some of the information on the notebook pages is highlighted for convenience. See in particular the highlighted information next to "Cell #1" on page 2489-110 and "Cell #2" on page 2489-111. The electrochemical cells were coin cell models that included a plastic housing, a cathode including "9-EMD" (9-electrolytic manganese dioxide) on a "primed Al" (aluminum) current collector. The aluminum current collector in turn was pressed on an "SS grid". SS is stainless steel, and the aluminum current collector thus was in contact with a second metal surface (the stainless steel) different from the surface of the aluminum current collector. The cells included a "Li" (lithium) anode and an electrolyte including "0.05 M" (page 2489-110) or "0.03 M" (page 2489-111) LiBOB." LiBOB is lithium bis(oxalato)borate. Thus, the electrochemical cells described on laboratory notebook pages 2489-110 and 2489-111 include all of the requirements of claims 1-2, 5, 8-12, 31-35, and 45-46.

(b) Laboratory notebook pages 2489-110 and 2489-111 refer to “LiBOB in TDE10” in the highlighted information next to “Cell #1” and “Cell #2”. TDE10 is an internal name for an electrolyte that includes, among other ingredients, lithium trifluoromethanesulfonate. Thus, electrochemical cells on laboratory notebook pages 2489-110 and 2489-111 also include all of the requirements of claims 3 and 4.

(c) The aluminum cathode current collector used in the electrochemical cells on laboratory notebook pages 2489-110 and 2489-111 had a size of at least one dimension greater than 2 millimeters. Thus, the electrochemical cells on laboratory notebook pages 2489-110 and 2489-111 include all of the requirements of claims 14-16.

(d) The electrochemical cells on laboratory notebook pages 2489-110 and 2489-111 were designed to be discharged once and then discarded, and thus are primary electrochemical cells as opposed to secondary (rechargeable) electrochemical cells. Thus, the electrochemical cells on laboratory notebook pages 2489-110 and 2489-111 meet all of the requirements of claims 17-24, 28, and 39-43.

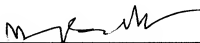
4. We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that those statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.



Dana Alexa Totir

06/03/08

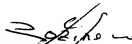
Date



Kirakodu S. Nanjundaswamy

05.28.2008

Date



Michael Pozin

05.19.08

Date

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21924048.doc

Subject Matter

If corrosion cell all the were inconsistent (results vary on a large range)

best test is 100% of cells.

- Notes:
- All test electrodes pressed in 35 grid (14) contact
 - No. 100 is best
 - corrosion of 424 can and of the alloy @ 3.8V (n.37)

Temperature measurements with Ag pseudo-reference electrode
 3 electrodes all in Ag alloy working electrode; 1: counter and reference electrode
 measured o.c.v. of electrodes in Li reference in 100%
 Corrosion of (W) in 0.1M LiClO₄ in Potassium in 100%
 Corrosion of (W), Li(Cl), Li(ClO₄) in Potassium (PC/LiClO₄)
 of (W), Ag(Cl), Li(ClO₄) in Potassium (PC/LiClO₄)

to compare the peak potential for Ag(Cl) and Li(ClO₄)
 to find out the potential difference.

Cell 1 p. 0.05 M in a 100% R, 10 contact 100% 732
 pressed in 35 grid in 100% R, 10 contact 100% 732
 3.100 contact, 0.05 M LiClO₄ in 100% (p. 0.05)
 10.2 40, 100% cell and
 100% test (133 mV)

Cell 2 100% 100% 100%

- At 2110 a.1. cor - Au(W), Li(Cl), Li(ClO₄), 100% Potassium in 100% ; CV
 between 2.7 - 3.7 V @ 20 mV/sec
- At 2100 a.2. cor - Ag(W), Au(Cl), Li(Cl), 100% Potassium in 100% - 700 mV
 separation to monitor by potential vs. 4
- At 2110 a.3. cor - Au(W), Li(Cl), Ag(Cl), 100% Potassium in 100%
 P.M. 0.7 - 0.7 V vs. ref @ 20 mV/sec
- At 2110 a.4. cor - Au(W), Li(Cl), Ag(Cl), 100% Potassium in 100%
 CV -0.6 - 0.6 V vs. ref @ 20 mV/sec
- At 2110 a.5. cor - same as above CV 0.7 - 0.7 V vs. ref @ 20 mV/sec

Witnessed & Understood by me,

Date

Recorded by

Date

Menden

Date

J.M.

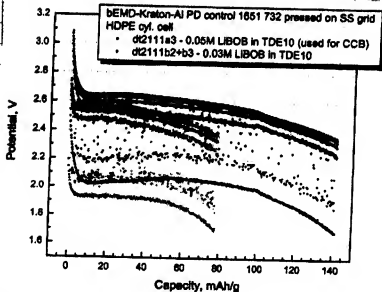
Subject Matter

- Jt 2111 a1. cor - Cell #1 described in page 110 - stopped after 170 pulses
Hec test @ 33 mA
- Jt 2111 a2. cor - open for 2h (alt #1)
- Jt 2111 a3. cor - Cell #1, Hec test, 33 mA, 600 pulses

Cell #2:

β -DMA Kraton-AI primed H. PD control 1651 732
pressed on SS grid w. 5-A welded Ni strip (40)
d300 exposed, (incl 0.03M LIBOS in TDE10, prep.
1x2 4, Hec test cell.

- Jt 2111 b1. cor - open circuit, 2h
- Jt 2111 b2. cor - Hec test, 33 mA, 500 pulses
- Jt 2111 b3. cor - Hec test, 33 mA, additional # of pulses
(collected, not why)



Witnessed & Understood by me,

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Date

Date

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Date